BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Applied Science Pearson BTEC International Level 3 Foundation Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Biomedical Science Pearson BTEC International Level 3 Extended Diploma in Applied Science Pearson BTEC International Level 3 Extended Diploma in Biomedical Science Pearson BTEC International Level 3 Extended Diploma in Environmental Science
Unit number and title	**Unit 11: Functional Physiology of Human Body Systems**
Learning aim(s)	**C:** Understand the role of homeostasis in controlling and coordinating the body systems
Assignment title	**Homeostatic control systems**
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	In preparation for your application to study for a degree in Nursing, you have gained a clinical work experience placement at your local hospital. During your placement, you will be observing a multidisciplinary team working within an endocrinology clinic. The staff provide treatment and care to patients with a wide range of disorders that disrupt the homeostatic mechanisms of the body. At the end of your placement, you must produce a report which evaluates the disruptive effects of homeostatic disorders, analyses how the endocrine and nervous systems work together to maintain homeostasis and explains the importance and purpose of feedback mechanisms in regulating body systems.

Task	Your report must provide the following: • A detailed **explanation** of the mechanisms of homeostasis and the reasons why these systems are crucial to the regulation and maintenance of a stable internal environment in the human body. An **analyse** of how the endocrine and nervous systems work together to bring about a state of equilibrium in human body systems and **evaluate** the physiological effects of any disruption to homeostatic mechanisms. Provide specific examples of a negative feedback mechanism and a positive feedback mechanism in the human body. Your examples must include clear **explanations** of how each of these feedback

	mechanisms work to either return the internal environment to its ideal value or maintain or accelerate a stimulus until its end point is reached. Your explanations must include the following key scientific terms related to feedback mechanisms: o optimum o variable o control centre o stimulus o receptors/sensors o effectors o feedback Illustrate your examples with labelled diagrams that you have produced yourself or obtained from a secondary source. All secondary sources of information must be properly referenced. • A detailed **analysis** of the relationship between the endocrine and nervous systems and the specific role of the hypothalamus in coordinating the two systems, including the functions of the two parts of the pituitary gland. Your analysis must show how the two systems are linked and how each system plays a role in maintaining homeostasis. • An **evaluation** of **two** factors that disrupt the homeostatic balance of the body. Your report must consider the significance of the physiological effects caused by two chosen factors that result in upset to the normally fine balance of specific control mechanisms. The factors to choose from are: o ageing o deficiency o toxicity o genetics o lifestyle
Checklist of evidence required	A report containing: • detailed explanations of homeostasis including examples of positive and negative feedback mechanisms. • Diagrams showing feedback loops • analysis of the relationship between the endocrine and nervous system and how these systems bring about homeostasis • analysis of the role of the hypothalamus and pituitary gland in homeostatic control • evaluation of two factors that disrupt homeostasis • evaluation of the physiological effects of homeostatic disruption Correct scientific terminology must be used throughout.

	• All secondary sourced diagrams must be properly referenced.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
C.D3	Evaluate the disruptive effects of factors affecting homeostasis
C.M4	Analyse the relationship between the endocrine and nervous system in maintaining homeostasis
C.P6	Explain the purpose and need for homeostasis
Sources of information to support you with this Assignment	https://www.healthline.com/human-body-maps/hypothalamus#symptoms https://www.saylor.org/site/wp-content/uploads/2010/11/Wiki-Human-homeostasis.pdf https://www.omicsonline.org/open-access/role-of-homeostasis-in-human-physiology-a-review.php?aid=87462 https://courses.lumenlearning.com/boundless-biology/chapter/homeostasis/
Other assessment materials attached to this Assignment Brief	e.g. work sheets, risk assessments, case study